

5 We Claim:

1. A motion disc comprising:

- a) a first prosthetic vertebral endplate comprising:
  - i) an first outer surface adapted to mate with a first vertebral body,
  - 10 ii) an first inner surface comprising an first peripheral surface and a first articulation surface,
  - iii) a body portion connecting the first inner and outer surfaces,,
- b) a second prosthetic vertebral endplate comprising:
  - i) an second outer surface adapted to mate with a second vertebral body,
  - 15 and
  - ii) an second inner surface comprising a second peripheral surface and a second articulation surface,
  - iii) a body portion connecting the second inner and outer surfaces,,
- c) an articulating core member comprising:
  - i) a first articulation surface adapted for articulation with the first articulation surface of the first endplate, and
  - 20 ii) a second articulation surface adapted for articulation with the first articulation surface of the second endplate,  
wherein the articulating core member is disposed between the prosthetic endplates and oriented to produce a first articulation interface between the first articulation surface of the first endplate and the first articulation surface of the core member, and a second articulation interface between the first articulation surface of the second endplate and the second articulation surface of the core member, and
  - 25 iii) a peripheral shock-absorbing component comprising:

- i) a first surface contacting the first peripheral surface of the first endplate, and
- ii) a second surface contacting the second peripheral surface of the second endplate.

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2. The disc of claim 1 wherein each of the first and second articulation surfaces of the core component is convex.

3. The disc of claim 2 wherein the core component comprises a ceramic material.

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4. The disc of claim 1 wherein the shock-absorbing component comprises an elastomer.

5. The disc of claim 1 wherein each peripheral surface of the shock-absorbing component is tenaciously attached to the respective inner surface of each endplate.

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6. The disc of claim 1 wherein the inner surface of each prosthetic endplate comprises a channel, and each peripheral surface of the shock-absorbing component is adapted to fit within the respective channel.

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7. The disc of claim 1 wherein each endplate is made of a non-metallic material.

8. The disc of claim 1 wherein each endplate is made of a polymer composite material.

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9. The disc of claim 1 wherein each endplate is made of a PEEK-carbon fiber composite material.

10. The disc of claim 1 wherein the body portion of each endplate comprises a posterior portion and an anterior portion, wherein the anterior portion is thicker than the posterior portion, thereby providing lordosis.

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11. The disc of claim 10 wherein the lordosis produces an angle of between 5 and 20 degrees.
12. The disc of claim 1 wherein the body portion of each endplate comprises a posterior portion and an anterior portion, wherein the anterior portion is equal in thickness to the posterior portion.
- 5 13. The disc of claim 1 wherein the interior surface of each opposed endplate comprises a channel adapted to closely receive the peripheral shock-absorber.
- 10 14. The disc of claim 1 wherein the first surface of the peripheral shock absorber is tenaciously attached to the first peripheral surface of the first endplate.
- 15 15. The disc of claim 14 wherein the second surface of the peripheral shock absorber is tenaciously attached to the second peripheral surface of the second endplate.
16. The disc of claim 1 wherein the peripheral shock absorbing component comprises a posterior portion and an anterior portion, wherein the anterior portion is thicker than the posterior portion, thereby providing lordosis.
- 20 17. The disc of claim 1 further comprising a sheath adapted to at least partially enclose the articulation surfaces.
18. The disc of claim 1 further comprising:
- e) a second articulating core member comprising:
- 25           i) a first articulation surface adapted for articulation with the first articulation surface of the first endplate, and
- ii) a second articulation surface adapted for articulation with the first articulation surface of the second endplate,
- wherein the second articulating core member is disposed between the prosthetic endplates
- 30 and oriented to produce a third articulation interface between the first articulation surface of the first endplate and the first articulation surface of the second articulating core

member, and a fourth articulation interface between the first articulation surface of the second endplate and the second articulation surface of the second articulating core member.

5       19. The disc of claim 1 further comprising:

- e) a second peripheral shock-absorbing component comprising:
  - i) a first surface contacting the first peripheral surface of the first endplate, and
  - ii) a second surface contacting the second peripheral surface of the second endplate.

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20. The disc of claim further comprising:

- e) a lubricant disposed upon the first articulation interface.